

# Advanced Photon Source

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## BCDA Group Engineering Document Management Plan

### Section where used:

- All BCDA Group personnel who generate engineering documents must follow this policy, which gives direction on managing those documents.

### Changes made in this revision:

- N/A (new procedure)

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## BCDA Group Engineering Document Management Plan

### 1 Introduction

This document sets forth group-specific guidelines for management of engineering documents and drawings consistent with the Managing APS Documents Policy ([APS 1273342](#)). The BCDA Group is required to have such a policy in place to guide their staff in the details of controlling their engineering documents under this procedure.

#### 1.1 Related Documents

- Managing APS Documents Policy ([APS 1273342](#))
- Managing APS Engineering Documents ([APS 1423689](#))
- APS Design and Drafting Drawing Standard ([APS 1429632](#))
- [Argonne Quality Assurance Program Plan](#)

### 2 Repository Use and Revision Tracking for Engineering Documents

Table 1, which is copied from the Managing APS Documents Policy ([APS 1273342](#)), maps the valid document repositories with the workflows that are supported by each repository.

**Table 1: Work Flows and Revision Tracking Capability per Repository Type**

<b>Repository</b>	<b>Staff-controlled / No Revision Tracking (Not a controlled document)</b>	<b>Staff-controlled / Revision Tracking (Not a controlled document)</b>	<b>Controlled Document (A formal change procedure including an approval workflow and Revision Tracking)</b>
Group-Shared File System (GSFS)	X		
Group-Shared File System Plus a Revision Control System (RCS)		X	
ICMS		X	X (with approval thread)
Vault			X
PDMLink			X

Groups are encouraged to use a graded approach for managing their engineering documents by applying more rigorous revision control to those documents that are most

critical. The [Argonne QAPP](#) offers good examples of criteria that can be used to implement a graded approach.

The left column of Table 2 lists the types of documents generated by the group in its routine operation. The rest of the table gives guidance on which workflow and repository should be used for each type of document. It is recommended that groups follow this guidance. However, it is for each group to determine which workflow and repository best suit their needs.

**Table 2: Work File Repository Usage**

Criteria	Staff-controlled/ No Revision Tracking	Staff-controlled / Revision Tracking		Controlled Document			Drawing must meet D&D Standard (APS_nnnnnnn)
	Group-shared File System (GSFS)	GSFS + RCS	ICMS	ICMS (with approval thread)	Vault	PDMLink	
<b>SAFETY:</b> RSS Critical Component or Personnel Safety Related							
<b>MISSION CRITICAL:</b> Machine Protection or Critical for Operation							
<b>COST:</b>							
Fabrication exceeds \$100K				X			
Fabrication exceeds \$10K	X						
Fabrication exceeds \$2K	X						
<b>EXTERNAL USE:</b> Subject to External Review Fabrication by external vendor Possible Use at Other Facilities	X			X			
<b>Legacy drawings:</b> Criteria ...	[1]						
<b>Document/File Types</b>							
AutoCAD	X						
Solidworks							
Pro/E							
FPGA Code	[2]	[2]					
PLC Ladder Logic Source Code	[2]	[2]					
Software Source Code		X					
<b>DEFAULT</b>	X		X	X			

Additional Guidance:

[1] All legacy drawings are kept in the GSFS with their related project documents.

- [2] An image of the as-deployed code will accompany the drawings. Actual source code will be managed in an RCS outside of the plan described in this document.

### 3 Group-shared File Systems and Revision Control Systems (RCS)

Group-shared File Systems must reside on either the oxygen or phoebus servers. A group may have more than one shared file system, particularly if a Revision Control System (RCS) is used on one of them. If your group needs a new shared file system created, submit an IT Help Desk ticket for an “EDP Group-shared File System.”

List the Group-shared Files Systems for your group following the examples below:

**Path:** /home/oxygen/BCDA1/hardware/BCDA\_Projects

**Type of RCS:** none

**Directory Structure Guidance:**

*Subdirectories are named for each project (no whitespace), such as:*

*/home/oxygen/BCDA1/hardware/BCDA\_Projects/BC-005\_Transition\_Board*

### 4 Document/Drawing Requirements

To provide consistency within this group and with other groups, the following requirements for drawings should be used.

Criteria	Drawing Requirements
All Drawings	BC #, date, and revision must be on the drawing Title Block similar to that used by the Controls Group (for new work)
Safety-Related Systems Work For Others	N/A

### 5 Software Tools

Standardized software applications for certain engineering drawing requirements are listed in the table below.

Document/Drawing Type	Software Tools
Schematic Capture	Orcad Capture
PC Layout	Orcad Layout
FPGA Programming	Altera Quartus, Xilinx ISE
PLC Programming	Vendor-specific support

Mechanical Layouts (Front Panels, Chassis, etc)	AutoCAD Lite, Visio
Feature Sheet	Single page Word document with picture of product
Block Diagrams	Orcad, Visio, PowerPoint
Wiring Diagrams	Orcad, Visio, PowerPoint
Project Description	Wiki Page

## 6 Alias Project Naming Convention (if any)

Create an internal project number. Go to the directory given as the Path in section 3 above and create a new subdirectory using the next available sequential number and the project name. Follow the same naming pattern as the previous projects. e.g., *BC-nnn\_Name\_of\_Project*.

## 7 Alias Drawing Naming/Numbering Convention (if any)

N/A

## 8 Group-specific EDP Collection Browse Categories

N/A

## 9 Feedback and Improvement

If you are using this procedure and have comments or suggested improvements for it, please go to the [APS Policies and Procedures Comment Form](#)<sup>\*</sup> to submit your input to a Procedure Administrator. If you are reviewing this procedure in workflow, your input must be entered in the comment box when you approve or reject the procedure.

Instructions for execution-time modifications to a policy/procedure can be found in the following document: Field Modification of APS Policy/Procedure ([APS 1408152](#)).

<sup>\*</sup> [http://centraldocs.aps.anl.gov/comment\\_form.php](http://centraldocs.aps.anl.gov/comment_form.php)